Workshop to Develop a Portfolio of Low Latency Datasets for Time-Sensitive Applications

27-29 September 2016
Langley Research Center, Hampton VA

Time-sensitive remote sensing data are designed to meet the needs of decision makers who can rapidly interpret and integrate the information to guide actions more accurately and consistently. Low latency, or near-real time satellite data, contribute to activities that deliver societal benefits including disaster risk, resilience, food security and sustainable agriculture, water and energy resource management, and ecosystem sustainability. NASA has expertise, research, observational infrastructure and partnerships to capture, process and deliver low-latency data sets, but the extent of these assets are not fully mobilized. By articulating the urgent science-informed decision making enabled by rapid response using low-latency satellite data, NASA and the stakeholder communities will be able to target resources to improve research results, advance application science, optimize data production, and guide technology development.

The goals of the workshop are:

1. Describe and characterize the existing NASA low-latency data portfolio in Earth science;
2. Describe and distinguish latency priorities of the research, analysis and application science communities of practice to satisfy needs;
3. Identify what near real time datasets and data products we expect to have/could have in the coming decade and the processes required to provide these datasets and products;
4. Articulate the key underlying science questions that are answered with low latency remote sensing data; and
5. Articulate the issues and challenges of near-real time data acquisition and management including discovery and utility.

Expected Workshop Outcomes:

- *Development of an inventory for existing NASA NRT datasets and associated data products and infrastructure;*
- *Identify how we can build better data products from currently available capabilities; and*
- *Establish a draft charter for a team to focus on the availability, discovery and utility of NRT, which continues planning and coordination across the community of practice, maintains routine engagement with stakeholders, and informs program planning with leadership and other decision makers.*

Tuesday, September 27, 2016 NASA Langley Reid Center Conference Room		
8:00am	**Registration & Check-in**	
	Speaker	**Topic**
9:00am	Molly Brown and/or Diane Davies	Welcome to Workshop
9:05am	Michael Freilich, NASA HQ, (Remote presentation)	Charge of the workshop and NASA Earth Science priorities (15 minutes for Q&A)

10:05am	David Green, NASA Applied Science Program, NASA Headquarters	Applied Science Perspective
10:20am	Christine Bonniksen, NASA Headquarters	Mission perspective on support for NRT data production (5 minutes of Q&A)
10:45am	Kevin Murphy, NASA Headquarters	Increasing the utility of NASA's NRT data and services inventory
11:05am	Chris Justice, UMD, LANCE User Working Group Chair	LANCE NRT data and the role of UWG and key end users
11:25am	**Coffee break**	
11:40am	Pat Coronado /Kelvin Brentzel, Direct Readout Laboratory, NASA GSFC	Direct Readout Laboratory and their provision of NRT data
12:00am	Will Stefanov, Associate ISS Program Scientist for Earth Observations, NASA JSC	Overview of the Near-Real Time Data Potential of the International Space Station
12:20pm	Alex Fore, NASA JPL	RapidScat
12:30pm	Don Sullivan, NASA LARC	NRT from field campaigns
12:50pm	Ryan Boller, NASA GSFC	The Common Metadata Repository, the Earthdata Search Client and Worldview: ESDIS tools that could be leveraged towards a NRT Portal.
1:10pm	**Lunch Break**	
Lightning talks of products proposed to be included in LANCE		
2:00pm	Michael Goodman, NASA MSFC	The International Space Station Lightning Imaging Sensor (ISS LIS)
2:10pm	Dan Ziskin, NCAR - Atmospheric Chemistry Observations & Modeling Laboratory	Measurement of Pollution in the Troposphere (MOPITT) NRT.
2:20pm	Molly Brown	Introduction of breakout group topics, objectives and directions
2:30pm	Portfolio development and gap identification for NRT data products, and discussion of NRT science questions. ***Outcomes:*** ➢ Each group should review the NRT portfolio and further the inventory, discuss the challenges, opportunities, data availability, and data needs for each application area ➢ Each group must ***report at least two conclusions*** from the breakout group in a single PowerPoint slide LANCE user working group in parallel session.	
4:30pm	Reports back from groups (5 minutes each)	***Designated reporter from each group with 1 PowerPoint slide***
5:20pm	**Open Discussion**	
6:00pm	Molly Brown	***Conclusions, start time on Day 2, and invitation to Social***
6:05pm	***NRT Social and Poster Session at Cafeteria area***	

Wednesday, September 28, 2016		
8:00am	**Coffee, Registration & Check-in**	
	Speaker	**Topic**
8:30am	Molly Brown and/or Diane Davies	Welcome to Day 2 – Goals and objectives for second day of the workshop.
8:40am	Lawrence Friedl, NASA HQ	Applications perspectives and sources of data in the context of GEO and other data partnerships
9:00am	Brenda Jones, USGS	Hazards Data Distribution System / NRT Landsat
9:20am	Stuart Frye, NASA, GSFC	NRT data for CEOS and GEO
9:40am	Mike Little, NASA HQ	Advances in technology: improving delivery and accessibility of NASA's NRT data
10:00am	Ana Prados, UMBC	NASA Applied Remote Sensing Training (ASRET): Building Capacity to access and use NASA NRT products
10:10am	**Coffee break**	
10:40am	Bob Tetrault US-FAS and Chris Justice, UMD/ GEOGlam	Agricultural and Drought Monitoring
10:50am	Brad Zavodsky, NASA MSFC	Use of Satellite Data within Weather Decision support systems
11:00am	Wilfrid Schroeder, UMD and Brad Quayle USFS RSAC	Fire data and users
11:20am	Dave Winker, NASA LARC and Kim Richardson, NRL	CALIOP- derived NRT aerosols applied in NRL NRT data products
12:40am	Jim Szykman, EPA / NASA LARC	Low Latency Datasets for Time-Sensitive Applications under the U.S. EPA AIRNow Program: Regional-to-Global Air Quality
1:00pm	**Lunch Break**	
2:00pm	Patrick Minnis, NASA LaRC	NRT of NASA Langley Satellite Imager-Based Cloud Property and Clear Sky Temperature Retrieval Datasets
2:20pm	Ryan Boller, NASA GSFC	NRT Portal
2:40pm	Molly Brown - **Introduction to breakout groups**	
2:50pm	Portfolio development and gap identification for NRT data products ***Outcomes:*** ➢ Each group should review the NRT portfolio and further develop the inventory, create a list of data used, data gaps, future data needs, and science questions behind each applications area ➢ Each group must ***report at least two conclusions*** from the breakout group.	
4:50pm	Reports back from groups (5 minutes each)	***Designated reporter from each group with 1 PowerPoint slide***
5:10pm	Open Discussion, Moderated by David Green, NASA HQ	
5:50pm	**Adjourn for the day**	

Thursday, September 29, 2016		
8:00am	**Coffee**	
	Speaker	**Topic**
8:30am	Molly Brown and/or Diane Davies	Welcome to Day 3 – Goals and objectives for third day of the workshop
8:40am	William Blackwell, MIT Lincoln Labs	Cubesats and related technologies and mission opportunities for low latency data
9:00am	Questions and discussion	
9:10am	Christopher Lippitt, University of New Mexico	NRT data and Earth Science priorities
9:30am	Questions and discussion	
10:00am	**Coffee break**	
10:20am	Molly Brown	Overview of results from breakout groups on days 1 and 2
10:30am	Panel Discussion – objectives are to discuss the scientific, programmatic and practical consequences of the NRT portfolio and status of the existing inventory, ways we can continue to ensure NRT data is available, discoverable and meets the needs in the coming decade. Chair: David Green Participants: Chris Justice, Kevin Murphy, Michael Goodman	
12:00	David Green	Review of Meeting Outcomes: Status of Inventory, Chartered Team and other Findings
12:15pm	Sandra Cauffman	Preliminary Response to Outcomes Expected Next Steps and Closing Remarks
12:30pm	**Adjourn**	